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NATIONAL ACCOUNTING CULTURE AND THE RECOGNITION OF PROVISIONS: AN APPLICATION OF THE PRUDENCE PRINCIPLE

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Abstract : Prudence in accounting is a corner-stone concept which has shaped accounting theory, as well as ordinary financial reporting. Thus, on the quantitative side of the study, we developed a proxy for accounting conservatism, namely the degree of uncertainty associated with the settling of a company's obligations. To this purpose, we hand-collected accounting data for 388 business groups from 17 European countries. For these companies we computed the provisions-to-liabilities ratio (*PLR*) and performed several group tests, according

to the following original classification of national accounting cultures. The results indicate that companies incorporated in countries that are classified as 'conservative' do assign a significantly higher degree of uncertainty to their total amount of liabilities.

Keywords : mixed research methods, accounting conservatism, European companies, national accounting culture, international harmonization

1 Introduction

The recourse to the prudence principle is sometimes the pretext for adjusting a company's financial performance towards market expectations or the managers' interest for certain income patterns. A large body of literature has attempted to point out that managers are inclined to adopt certain politics of earnings management in order to maximize their own remuneration or boost share prices.

The positive accounting theory has indicated three major managerial goals, to account for earnings management: the control of political costs (Labelle and Thibault 1998), the reduction of financing costs (Broye and Schatt 2002; Stolowy and Breton 2003), and the maximization of executive remuneration (Jensen and Meckling 1976). In Europe, however, the large shareholders – as self-appointed members of the Board of directors – often take part in the running of the business. Thus, earnings management is no longer targeted primarily at the welfare of the owners, but at the alteration of perceptions of other stakeholders (e.g. the government, banks, customers or employees) regarding the firm's financial performance, with consequences on costs and benefits of future transactions (Breton and Schatt 2003).

In this respect, managers may be tempted to downsize the annual income in order to avoid difficult negotiations with employees or unions (Waterhouse et al. 1993). Moreover, such accounting policies have the ability to readily justify the initiation of a restructuring

programme, in order to revive future performance. Clearly, the social risk of an announced restructuring plan is much higher for a company with robust performance than for a company with more volatile or pessimistic prospects (Breton and Schatt 2003).

Earnings management is the effect of the existence of alternative accounting policies. In this respect, the recognition and measurement of provisions are some of the key techniques for earnings management, granting company executives the ability to make the desired adjustments of the operating income figure (Jeanjean 2001). The previous literature has focused mainly on the impairment of assets, rather than on provisions for risks and charges, and has reported mixed results concerning their contribution to the phenomenon of earnings management. Thus, some authors provided evidence on a strong link between impairment adjustments and earnings management (Bhat 1996; Greenwalt and Sinkey 1988; Kanagaretnam et al. 2004), while for others this relationship is still doubtful (Ahmed et al. 1999; Beatty et al. 1995). Nevertheless, this investigation is fruitful for further research, since accounting theory predicts the alteration of the true and fair view through the abusive use of provisions.

Earnings management is an all-encompassing term for a series of phenomena which aim to elude the provision of a ‘true and fair view’. However, the factors that trigger earnings management cannot be limited to the discretion of managers and agency conflicts with the owners. We believe that there are more profound causes, some deeply rooted in the national accounting culture to which any company belongs. At the same time, the accounting traditions may be well influenced by some of the problematic cases listed above, e.g. the difficult negotiations with employees and unions, fiscal pressures, restructuring opportunities or the relationship with finance institutions.

Our contribution is focused on the following hypothesis: *regarding the recognition and measurement of provisions for risks and charges, national accounting culture is still visible even when companies report in compliance with IFRS*. Provisions are one of the main vehicles for earnings management. Therefore, the accounting policies offered by the International Financial Reporting Standards (IFRS) regarding the treatment of provisions have created a large avenue for interpretation and ‘creativity’, and thus for earnings manipulation.

However, in this study we are not interested in the quality of reported earnings, but in the degree of uncertainty associated with the settling of a company’s obligations. We measure this indicator by computing the ratio of short- and long-term provisions to total liabilities (*PLR*), in order to use it as a proxy for accounting conservatism. Prudence in accounting is one of those corner-stone concepts which populate accounting theory, as well as accounting practice, sometimes in obscure and perverse ways. Accounting conservatism is one of the most popular excuses for earnings management, and thus an appropriate variable for our study.

To this purpose, we hand-collected accounting data (i.e. provisions and total liabilities) for 388 business groups from 17 European countries. The companies were extracted from a European large-cap index, and are representative for sectors such as: automobiles and parts, basic resources, chemicals, construction and materials, food and beverage, healthcare, industrial goods and services, media, oil and gas, retail, technology and telecommunications, travel & leisure, and utilities. For these companies we computed the provisions-to-liabilities

ratio (*PLR*) and performed several group tests, according to our own classification of national accounting cultures.

The degree of conservatism is believed to be one of the fundamental attributes of a national accounting culture. In the European Union, each member state kept its own accounting standards, harmonized with the European Directives. However, listed companies have to draw their annual accounts in accordance with the IFRSs, which exhibit a totally different paradigm. We classified the 17 European countries in our sample in three groups – IFRS-compliant, conservative and liberal – according to how domestic standards recognize and measure provisions for risks and charges, when compared to IFRS. The companies in our sample belong to the following accounting environments: IFRS-compliant (147 firms), conservative (179) and liberal (62). Therefore, we perform several statistical group tests in order to answer the research question: *is accounting culture still a significant factor in the choice of accounting policies, even if the companies are presumably following uniform accounting standards, such as IFRS?*

The paper is organized as follows. The literature review section offers a discussion of the causes, manifestations and effects of accounting conservatism, whether tied to earnings management or to national accounting culture. The hypothesis development section offers a review of domestic accounting policies regarding the recognition and measurement of provisions, for the 17 European countries where the sample companies are incorporated. The methodology and results section presents the sample selection and the detailed statistical tests, along with a discussion of the implications of our findings. As a conclusion of this paper, we attempt to offer a perspective on the fruitfulness of future research on such topics such as the convergence of national accounting culture with international accounting standards.

2 Literature review and hypothesis development

2.1 An overview of the conservatism principle and its financial effects

Prudence is undoubtedly the most controversial accounting principle, because it systematically adopts a pessimistic outlook on economic transactions. Although the mechanics of prudence (or conservatism) may seem easily applicable in practice, the providers and users of accounting information usually concern themselves with questions such as: why this pessimistic approach to doing business and when is it suitable? Why this asymmetry in treating surpluses and deficits? Which are the pros for keeping the conservatism principle?

An abundant literature has sought to answer such questions regarding the benefits and deficiencies of prudent recognition of accounting elements. Some of the dedicated studies tackle conservatism from a conceptual perspective, while others provide empirical evidence on accounting conservatism.

Traditionally, prudence has been reflected in accounting by the proverb ‘anticipate no profit, but anticipate all loses’ (Bliss 1924; Pae et al. 2005). Anticipating profits leads to an early recognition, even before there is legal claim to the revenues generating them. A conservative approach does not require all revenue to be cashed in, but all revenue-generating

transactions to be easily verifiable (Watts 2003a). The influence of conservatism on accounting philosophy has been overwhelming. Thus, in 1967, Sterling (cited in Hellman 2008), noted that ‘many academics and accountants are only moderately conservative or anticonservative when it concerns a theoretical discussion regarding accounting principles, but when it comes to the valuation of a specific asset, the recurrent phrase that something “is or is not conservative” is almost inevitable’. Apparently, Sterling’s remark on the gap between the theoretical and applied views on accounting conservatism still holds today (Hellman 2008).

In the context of empirical research, the definition from Bliss is interpreted as ‘the accountant’s tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses’ (Basu 1997). The verifiability imperative results in asymmetric earnings timeliness with respect to gains versus losses, resulting in a cumulative understatement of net assets (Watts 2003a). This interpretation allows for degrees of conservatism: the greater the difference in degree of verification required for gains versus losses, the greater the conservatism (Watts 2002). In this respect, Basu (1997) proved that the slope coefficient in the regression of earnings on returns is higher for firms reporting negative returns than for those reporting positive returns.

Kwon et al. (2001) formulate the principles of traditional financial reporting in the context of efficient contracting, with a manager subject to limited liability, considering that ‘the accounting system is more likely to report “low” when the outcome is low than to report “high” when the outcome is high’ (p.32). Their definition is consistent with that of Basu’s, considering that a higher verification is required for high outcomes (gains) than for low outcomes (losses).

For a sample of US firms followed over a three-year period, Pae et al. (2005) found that earnings are generally conservative in the sense that the sensitivity of earnings to returns is greater for “bad news firms” (those experiencing negative returns) than for “good-news firms” (those experiencing positive returns). Balance sheets are generally conservative in that both mean and median market-to-book ratios exceed one.

LaFond & Watts (2007) investigated the effect of informational asymmetry between management and investors on accounting conservatism, suggesting that the asymmetric recognition of gains and losses in the current financial statements is increasing the level of information asymmetry. Similarly, Khan & Watts (2007) estimated a firm-year measure of financial reporting conservatism (*C_Score*) and provided evidence on its empirical properties as a metric and its predictive ability for future asymmetric timeliness. Specifically, firms with a higher *C_Score* have several characteristics associated with conservatism, such as a higher informational asymmetry and litigation propensity.

2.2 Conservatism and national accounting culture

Watts (2002) reviews several explanations for employing prudence in accounting, such as: contracting, shareholder litigation, taxation and accounting regulation. The study reveals that when contracting and shareholder litigation explanations prevail in the existence of conservatism and its increase, the effect of taxation and regulation is weaker; earnings management could also produce some of the evidence on conservatism but it is unlikely to be

the major explanation. These remarks support the idea that prudence may exist even in the absence of formal contractual use of financial statements. As long as income and net worth have an impact on managers' wealth, prudence will remain an optimal accounting principle.

In a later article, Watts (2003a) offers further insight into the explanations of applying the conservatism principle, and formulates some implications for the accounting regulator. The particularity of this contribution resides in that it develops a general contracting explanation for conservatism that encompasses the existing dividend constraint explanation, and predicts that other contracts employed within the firm, such as managerial compensation contracts, will also generate conservatism. Furthermore, the study posits that, even without contracting considerations, an information perspective produces conservatism once the information costs of changed managerial behaviour are introduced. Watts (2003b) suggests that the contracting and shareholder litigation explanations are the most prominent. Evidence on the effects of taxation and regulation is weaker but consistent with those explanations.

Ball et al. (2000) examined the variations in accounting conservatism for seven national standards, and argued that reported conservatism will vary depending on the institutional context. They hypothesize that a country's degree of accounting conservatism may vary according to the political and regulatory framework. For this reason, a code-law/common-law classification can be used as an empirical proxy for cross-country institutional differences. The results indicated that market news is rapidly absorbed in stock prices for companies incorporated in common-law countries, in contrast with Roman law systems.

Giner and Rees (2001) extended Basu's model by examining the degree of conservatism implied by the use of current returns and lagged earnings. The analysis relied on a sample of firms from France, Germany and the UK, for the period between 1990 and 1998. The results indicate that lagged earnings explained current earnings better than current returns. However, the authors did not report any significant differences between the three countries, possibly indicating that accounting practices were already harmonized. Lara et al. (2005) re-examined the above study, while adopting the unmanaged earnings measure (earnings minus discretionary accruals) rather than reported earnings. The latter authors provided evidence that there are significant differences between common-law and code-law countries, but only after correcting for the effect of discretionary accruals. They conclude that code-law based European country managers have an incentive to consistently manage earnings downward.

Another hypothesis of great interest refers to the influence of national culture on the degree of accounting conservatism. Using a nine-year panel comprised of 800 firms from 21 countries, Kang et al. (2004) examined the relationship between cultural conservatism and accounting conservatism. Empirical evidence indicates that managers from more conservative cultural environments tend to make more conservative accounting choices. Furthermore, the interactions between national culture and the legal system are prone to explain prudence attributes. Results show that culture and the legal regime are independent variables, appropriate in explaining managers' conservative accounting choices. Specifically, the study highlights the fact that cultural conservatism plays a relatively more important role in explaining accounting conservatism in code law countries, where accounting is known to be less conservative (relative to common law countries), and vice versa.

International convergence of accounting standards has become a reality with growing impact on financial reporting and the functioning of markets. Thus, the inclusion of the prudence principle in a changing regulatory configuration is of particular interest to researchers. Therefore, Hellman (2008) examined three situations: the judgment related to the recognition of deferred tax receivables pertaining to loss carryforwards under IAS 12, the judgment regarding the capitalisation and impairment of development costs under IAS 38, and the judgment regarding the use of the percentage of completion method and the zero recognition method during the completion of construction contracts under IAS 11. The author considers that the lower emphasis on consistent conservatism under IFRS will be replaced by an increased use of temporary conservatism. The temporary application of the conservatism principle (changes in accounting estimates) implies that profits will initially be understated, leading to the creation of a hidden reserve or to excessive provisions, followed by a subsequent overstatement of profits in later periods.

It has been argued that, comparative with national accounting, the temporary applications of the conservatism principle are built into the IFRSs to a greater extent. Moreover, companies' internal use of the IFRS mix of temporary and consistent applications of the conservatism principle may cause counter-intuitive interpretations of the underlying business activities, i.e. interpretations that may have negative effects on the controlling and motivation of managers.

The studies reviewed above have introduced several concepts gravitating around the conservatism principle: informational asymmetry, inconsistent recognition and measurement of financial elements, national accounting culture and the pressures for harmonization. The next section formulates the hypotheses of the study, while bringing into spotlight a very specific element of financial statements: provisions according to IAS 37. We believe that the recognition of provisions is intimately linked with accounting conservatism, and this is why we engage in establishing the connection between national culture and international accounting standards, through the analysis of the frequency and scale of this type of uncertain financial liabilities.

3 Hypothesis development

3.1 Provisions as a proxy for accounting conservatism

According to IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*, a provision should be recognized when (a) an entity has a present obligation as a result of a past event; (b) it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and (c) a reliable estimate can be made of the amount of the obligation.

The present obligation may have either a legal nature (i.e. when it is found within contractual or regulatory bounds), or a constructive nature (i.e. when, by an established pattern of past practice, published policies or a sufficiently specific current statement, the entity has indicated to other parties that it will accept certain responsibilities). The effect of possible new legislation is taken into consideration in measuring an existing obligation when

sufficient objective evidence exists that the legislation is virtually certain to be enacted. In many cases sufficient objective evidence will not exist until the new legislation is enacted.

The amount recognized as a provision should be the best estimate of the expenditure required to settle the present obligation at the end of the reporting period. The estimates are determined by the judgment of the management of the entity, supplemented by experience of similar transactions and, in some cases, reports from independent experts. Where the provision being measured involves a large population of items, the obligation is estimated by weighting all possible outcomes by their associated probabilities. The name for this statistical method of estimation is 'expected value'. Where there is a continuous range of possible outcomes, and each point in that range is as likely as any other, the mid-point of the range is used.

Where the effect of the time value of money is material, the amount of a provision shall be the present value of the expenditures expected to be required to settle the obligation. The discount rate shall be a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability.

It is only those obligations arising from past events existing independently of an entity's future actions (ie the future conduct of its business) that are recognized as provisions (e.g. penalties or clean-up costs for unlawful environmental damage). In contrast, because of commercial pressures or legal requirements, an entity may intend or need to carry out expenditure to operate in a particular way in the future (for example, by fitting smoke filters in a certain type of factory). Because the entity can avoid the future expenditure by its future actions, for example by changing its method of operation, it has no present obligation for that future expenditure and no provision is recognized.

Where some or all of the expenditure required to settle a provision is expected to be reimbursed by another party, the reimbursement shall be recognized when it is virtually certain that reimbursement will be received if the entity settles the obligation. The reimbursement shall be treated as a separate asset, while the amount recognized for the reimbursement should not exceed the amount of the provision. In the statement of comprehensive income, the expense relating to a provision may be presented net of the amount recognized for a reimbursement.

Beyond the generic recognition and estimation issues, IAS 37 also deals with two special types of provisions – those for onerous contracts and those for restructuring:

- The standard defines an onerous contract as a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it. If an entity has a contract that is onerous, the present obligation under the contract shall be recognized and measured as a provision.
- A provision for restructuring costs is recognized only when an entity has a detailed formal restructuring plan, or has raised a valid expectation that it will carry out the restructuring by starting to implement that plan or announcing its main features to those affected by it.

3.2 Domestic GAAP and the treatment of provisions

Beginning January 1, 2005, all European Union (EU) companies having securities listed on an EU exchange have been required to prepare consolidated (group) accounts in conformity with IFRS. Thus, the analysis of how certain IFRSs can be incorporated into national legislations represents an important avenue for research, mostly because standards like IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* are at the core of the conservatism principle and incite to earnings management.

The next section of our research seeks to capture the regulatory differences in the treatment of provisions pertaining to the accounting standards of 17 European Union countries. Each Member State has its own domestic corpus of dedicated rules, all under the auspice of the Fourth Directive, which in this case is the lowest common denominator (Peek, 2004). The significance of these differences may differ from one entity to another, depending on the actual economic transactions, the industry to which it belongs, or the chosen accounting policies. Moreover, the selection of the 17 countries is strictly linked to the sample of companies incorporated in these Member States, considering that only the largest firms in Europe were included in this study.

After a thorough analysis of national standards, three accounting professors agreed that the regulatory environments of our 17 sample countries could be classified according to the proximity between their national legislation and IFRS, as follows:

- An *IFRS-compliant* national regulation contains virtually identical rules to those of IAS 37 – United Kingdom, Sweden, Norway and Ireland;
- *Conservative* domestic rules regarding provisions are thought to increase the degree of accounting conservatism, by an anticipated and extended recognition of provisions in the financial statements – France, Germany, Switzerland, the Netherlands, Finland, Belgium and Austria;
- *Liberal* national accounting rules generally impose less than IFRS, and suggest a more superfluous treatment of provisions for firms incorporated in certain European countries – Spain, Italy, Denmark, Portugal, Greece and Luxembourg.

For example, in France, The General Accounting Plan imposes the recognition of legal provisions, which do not correspond to the regular object of a provision and which are measured according to State norms (Dick & Eberhartinger, 2002). These include provisions: for exchange rate fluctuations, for investments in certain fields (e.g. mining), and for investments relative to the employees' participation. Among the ordinary provisions, unlike IAS 37, the French GAAP imposes the recognition of provisions for predictable and significant charges, which occur on a systematic basis, but not yearly, and which should not be included in full amount on a given year in the profit and loss account. On the other hand, there are fewer details than in IAS 37 on the measurement criteria of restructuring provisions. Unlike IAS 37 and IAS 21 on 'Effects of changes in foreign exchange rates', the French GAAP classifies as 'provisions for risks' all year-end latent losses concerning assets and liabilities expressed in foreign currency. Details are provided concerning yearly restatement of foreign exchange losses.

In the methodology and results section we will make use of the above classification, and report the findings for statistical tests applied to companies from these three groups of countries, seeking to find evidence in favour of the following hypothesis:

In the context of provisions for risks and charges, national accounting culture is still visible even when companies report in compliance with IFRS.

4 Sample selection and results

For the 600 companies included in the Dow Jones STOXX® 600 index, representing large, mid and small capitalization companies across 16 European Union countries and Switzerland, we followed the Industry Classification Benchmark (ICB) provided by Stoxx Ltd. We excluded all those firms classified as belonging to the financial sector (143 entities), i.e. banking, insurance, mutual funds, or investment services. For the rest, we analyzed the consolidated financial statements and notes to the accounts, and eliminated 69 companies which either: (a) had reported under US GAAP – 3 Swiss companies; (b) had not recognized any provisions – 56 firms; or (c) were subsidiaries of other companies in our sample – 10 cases. The final sample was comprised of 388 business groups from 17 countries.

We collected the cross-sectional raw data from the annual reports of the selected companies, for one fiscal year. Depending on the accounting period of each company, year-end dates varied between the 31st December 2007 and the 30th September 2008. We analyzed the information regarding a company's provisions from the notes to the annual accounts. The provisions are recognized strictly according to the IAS 37, thus excluding all elements dealing with accounting for employee benefits (IAS 19), income taxes (IAS 12), leases (IAS 17), or financial instruments carried at fair value (IFRS 7). Each company may recognize several types of provisions for a given fiscal year; the frequency of each category of provisions is provided in **Table 1**. In several cases the reported amounts were included under the heading 'Other provisions' and we were unable to classify them properly.

Table 1. The classification and frequency of provision types recognized under IAS 37.

<i>Provisions for...</i>	<i>Frequency (no. of companies)</i>	<i>Percent of (sample size: 388)</i>
Litigation	242	62,4
Restructuring	208	53,6
Warranties	134	34,5
Environmental	118	30,4
Onerous contracts	110	28,4
Properties	106	27,3
Personnel costs	105	27,1
Abandonment	47	12,1
Marketing	46	11,9

4.1 Main empirical analysis

The purpose of this article is to answer the following research question: do European firms belonging to contrasting accounting cultures recognize provisions in a significantly different manner when reporting under IFRS? In other words, is the national accounting regulation a major factor in the preparation of IFRS-compliant consolidated financial statements? In the previous section, we argued for a classification of national accounting systems into IFRS-compliant, conservative, and liberal, based on the treatment of provisions particular to each of these.

In accordance with the literature review, we employ only one test variable, namely the ratio of short- and long-term provisions to total liabilities (*PLR*). We use it as a proxy for the degree of uncertainty associated with the settling of a company's obligations. Moreover, the analysis implies that *PLR* can be a measure of the degree of country-specific conservatism infiltrated into the recognition and measurement of provisions under IFRS. The descriptive statistics presented in **Table 2** highlight the main characteristics (mean, median and standard deviation) of the sample companies, when classified according to their country of incorporation. In line with the grouping of countries according to their degree of convergence between the national regulation and IFRS, the superscript next to each country designates the dominating attribute of the national accounting standards.

Table 2. Descriptive statistics concerning the provisions to liabilities ratio (*PLR*) for companies grouped by their country of incorporation

<i>Countries grouped by national accounting culture</i>	No. of companies	<i>PLR</i> Mean	<i>PLR</i> Std. Dev.	<i>PLR</i> Median	<i>Mean rank for Kruskal-Wallis</i>
United Kingdom (UK)	112	4.62	3.96	3.62	
Sweden (SE)	24	5.07	3.16	4.39	
Norway (NO)	8	3.67	4.54	2.53	
Ireland (IE)	3	1.75	1.34	1.11	
IFRS-compliant: TOTAL	147	4.58	3.84	3.52	175.97
France (FR)	63	5.93	5.03	4.53	
Germany (DE)	41	10.82	8.52	8.83	
Switzerland (CH)	25	9.49	10.28	6.38	
Netherlands (NL)	18	4.27	3.24	3.10	
Finland (FI)	16	4.06	4.47	2.76	
Belgium (BE)	9	6.17	4.90	4.77	
Austria (AT)	7	8.67	6.01	6.76	
Conservative: TOTAL	179	7.33	7.11	5.67	220.50
Spain (ES)	20	4.72	7.51	2.79	
Italy (IT)	17	5.11	3.83	4.82	
Denmark (DK)	12	6.09	6.44	3.79	
Portugal (PT)	6	2.11	1.96	1.84	
Greece (GR)	5	1.80	0.99	1.49	
Luxembourg (LU)	2	5.58	0.83	5.58	
Liberal: TOTAL	62	4.63	5.57	3.19	163.35

Using *PLR* as a dependent variable and national accounting culture as a factor, a one-way ANOVA was performed to compare the degree of prudence across the three groups of countries. The results indicate that the influence of national regulation generates significant differences, $F(2,385) = 10.613$, $p < .001$, in the recognition and measurement of provisions under IFRS. However, the homogeneity-of-variance assumption was violated, with Levene's statistic $W(2,385) = 9.936$, $p < .001$; similarly, the Shapiro-Wilk test indicated that the normality assumption was untenable for any of the three groups of countries.

Performing log transforms on the dependent variable rectified the normality problem, as indicated by the respective normal probability plots. In addition, Levene's test of equal variances, $W(2,385) = 1.112$, $p = .330$, suggested that data transformation improves the results of assumption testing. The second omnibus F -test is qualitatively identical to the first, $F(2,385) = 10.131$, $p < .001$, reflecting a medium effect, Cohen's $f = .233$ (Cohen, 1988). A non-parametric ANOVA test (Kruskal-Wallis) was performed on the untransformed data, $\chi^2(2) = 18.416$, $p < .001$, indicating that significant differences exist between the levels of prudence in the measurement of provisions, for companies belonging to different accounting cultures.

Since the homogeneity-of-variance assumption is not met for the untransformed data, we used Tamhane's T2 post-hoc test, which is generally insensitive to heteroscedasticity, skewness, or unequal sample sizes. Pairwise contrasts indicated that companies incorporated in countries with a conservative accounting culture were prone to recognizing significantly greater amounts ($p < .001$) of provisions than companies from IFRS-compliant or liberal accounting environments. In addition, it appears that liberal national accounting regulation does not influence companies in departing from the spirit of IFRS; thus there is no significant difference between the *PLR* averages of these last two groups of countries. The results presented above hold for any post-hoc test, either on the untransformed data or in logs.

It is crucial to remember that, for all sample companies, the measurement and recognition of provisions is done in accordance with IFRS for the preparation of consolidated annual accounts; our study does not apply to individual financial statements following the national accounting standards. The following discussion should clarify some of the particularities of our sample, in terms of distribution, outliers and possible causes for the existence of the significant inter-group differences in terms of accounting conservatism, and their effect on the comparability of consolidated financial statements.

4.2 Further tests and sample particularities

In order not to overestimate the power of our test, it is important to acknowledge the interaction between industry characteristics and national accounting culture. For our variable of interest – *PLR* (i.e. the proxy for accounting conservatism) – **Table 3** presents the descriptive statistics associated with industry classification for the sample companies. As expected, a one-way analysis of variance (ANOVA) revealed that the average *PLR* is significantly different across industries $F(14, 373) = 3.106$, $p < .01$; the non-parametric Kruskal-Wallis test of mean differences for independent samples confirms this result, $\chi^2(14) = 43.269$, $p < .001$. Significant differences between groups were examined using Tamhane's T2 post-hoc test, which is robust when equal variances are not assumed. The results for pairwise comparisons are presented in **Table 3**.

The uncertainty associated with liability recognition appears not to significantly discriminate between sectors. Chemical companies, having the highest average ratio of provisions to liabilities, can be considered to be significantly more prudent than media, telecommunications, food & beverage or retail firms. Even if mean *PLR* varies across sectors, the large variability within each sector leads to overlapping confidence intervals. Further analysis will try to reveal how extreme sector-driven *PLR* values impact the between-country differences of average conservatism scores.

Table 3. The descriptive statistics and post-hoc tests associated with sector-specific accounting conservatism for the sample companies.

<i>Sectors</i>	No. of companies	<i>PLR</i> Mean	<i>PLR</i> Std. Dev.	<i>PLR</i> Median
Automobiles & parts	12	7.48	4.31	7.21
Basic resources	23	4.79	4.24	4.23
Chemicals (1)	19	12.12	8.41	11.34
Construction and materials	31	5.74	3.45	5.69
Food & beverage (2)	21	3.57	2.31	3.10
Health care	24	6.47	8.66	2.76
Industrial goods and services	85	6.16	5.01	5.14
Media (2)	20	3.26	2.77	2.39
Oil & Gas	30	6.62	6.29	3.17
Personal & household goods	24	6.24	6.10	5.36
Retail (2)	20	2.49	1.88	1.14
Technology	12	6.07	5.73	4.47
Telecommunications (2)	19	3.47	2.93	2.28
Travel & leisure	19	6.32	7.84	4.81
Utilities	29	6.54	9.10	4.10

Notes. Differing indices indicate significant differences between *PLR* means, $p < .05$.

All three distributions for *PLR* scores grouped according to national accounting culture are positively skewed (see **Table 4** for skewness and kurtosis statistics). Therefore, all outliers are above the top quartile.

We expect sector-specific conservatism to have a considerable influence on the shape of the distribution for company scores grouped according to national accounting culture. Accordingly, in **Table 4** we further identify the industrial profile of each outlier. Thus, even if chemical companies do add a certain amount of positive skewness to the Conservative group, their influence is combined with the statistical impact of companies from several other sectors, like industrial goods and services, healthcare, utilities, technology or oil and gas. It appears that seven sectors carry outliers with respect to the distribution of *PLR* for companies belonging to a prudent accounting culture, therefore allowing us to conclude that abnormal distribution of scores in the Conservative group is not caused by the influence of one particular sector.

Table 4. The distribution of PLR scores grouped by national accounting culture, with an analysis of outliers.

<i>National accounting culture (No. of companies)</i>	<i>PLR Distribution</i>		<i>Count</i> (above top quartile)	<i>Outliers</i> Belonging to sector
	Skewness (Std. Error)	Kurtosis (Std. Error)		
IFRS-compliant (147 companies)	1.30 (0.20)	2.22 (0.39)	4 (<i>PLR</i> > 15 %)	3 x Oil & Gas 1 x Basic resources
Conservative (179 companies)	2.08 (1.82)	5.60 (0.36)	16 (<i>PLR</i> > 16%)	5 x Chemicals 4 x Industrial goods and services 2 x Utilities 2 x Healthcare 1 x Personal & household goods 1 x Technology 1 x Oil & Gas
Liberal (62 companies)	3.27 (0.30)	14.06 (0.59)	3 (<i>PLR</i> > 14%)	1 x Oil & Gas 1 x Travel & leisure 1 x Healthcare

Note. The normal distribution has a skewness of 0 and an excess kurtosis of 0.

5 Conclusions

Our contribution rests on a large body of work regarding earnings management, but on a very meagre scientific base in relation to the measurement of accounting conservatism in a national setting. We identified the degree of uncertainty associated with the settling of a company's obligations as a proxy for accounting conservatism. This degree of uncertainty was measured as the ratio of short- and long-term provisions to total liabilities (*PLR*), and was hand-collected for 388 large companies incorporated in 17 EU member states. We further classified the respective countries in three groups, according to how provision recognition is handled by national accounting regulation. Thus, we concluded that there is a certain "domestic accounting culture", classified as IFRS-compliant, conservative or liberal.

The results indicate that companies incorporated in countries that are classified as 'conservative' do attribute a significantly higher degree of uncertainty to their total amount of liabilities. If we take into account that all the companies in our sample prepare their annual accounts in compliance with IFRS, we can conclude that national accounting culture – when classified as prudent – exhibits a significant influence on the IFRS policies that companies apply with regard to the recognition and measurement of provisions. In other words, even if the International Financial Reporting Standards are the common accounting language of listed companies in Europe, the chapter on provisions is still a matter of managerial discretion, whether influenced by traditional accounting practices or by other factors.

Data collection for an extended time span should bring further insight into determining the degree of uncertainty associated with the settling of a company's obligations. Moreover,

this avenue of research is generous enough to include financial institutions as well. Finally, identifying a connection between the quality of a company's corporate governance and its degree of accounting conservatism is another direction of future research, in the context of establishing the economic causes and consequences of adopting a prudent stance within the annual accounts.

6 References

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